CLAIMS

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- 1. A method of delivering a packet from a first device in a first piconet of a scatternet to a destination device in a second piconet of the scatternet comprising:
- creating a direct radio communications link between the first device and the destination device; and
- transmitting the packet via the direct radio communications link.
- 2. A method as claimed in claim 1, wherein the destination device is joined to the first piconet.
 - 3. A method as claimed in claim 1 or 2, wherein the step of creating a direct radio communications link creates a third piconet between the first piconet and the second piconet.
 - 4. A method as claimed in claim 3, wherein the first device operates as Master of the third piconet.
- 5. A method as claimed in claim 1, 2, 3 or 4 wherein the scatternet has a topology defined at initiation of the scatternet and creating the direct radio communications link adjusts the topology of the scatternet.
- 6. A method as claimed in claim 4, wherein the direct radio communications link creates a short-circuit in the network topology.
 - 7. A method as claimed in any preceding claim wherein a piconet is a startopology low power radio frequency network comprising a Master as a central node and one or more Slaves as dependent nodes, each of which has a radio communications link to the Master, and a scatternet is a distributed low power radio frequency network comprising a plurality of piconets that are interconnected by radio communication links.

- 8. A method as claimed in any preceding claim, wherein the first device and/or the destination device are mobile.
- 9. A method as claimed in any preceding claim further comprising: determining whether the creation of a direct radio communications link between the first device and the destination device is possible.
- 10. A method as claimed in claim 9, wherein the packet comprises an addressof the destination device and the step of determining uses the identity of the destination device.
 - 11. A method as claimed in claim 10, wherein the step of determining comprises determining if the destination device is within radio communication range of the first device.
 - 12. A method as claimed in claim 9, wherein the first device maintains a list of devices within radio communication range.
- 20 13. A method as claimed in claim 12, wherein the list comprises, for each device within communication range, an address and a clock offset.
 - 14. A method as claimed in 12 or 13, wherein the list is maintained using the Bluetooth Inquiry procedure.

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- 15. A method as claimed in claim 12, 13 or 14, wherein the step of determining comprises the first device determining whether the destination device is included in the list.
- 30 16. A method as claimed in claim 15, wherein the comparison occurs within the Bluetooth Link layer.

- 17. A method as claimed in any preceding claim, wherein the direct radio communications link is temporary.
- 18. A method as claimed in claim 17, wherein the direct radio communicationslink is released after a predetermined period of inactivity.
 - 19. A method as claimed in any preceding claim, wherein the packet is a routing request.
- 20. A method of delivering a packet from a first device in a first star-topology sub-network of a distributed low power radio frequency network to a destination device in a second star-topology sub-network of the distributed network comprising: creating a direct low power radio frequency communications link between the first device and the destination device; and transmitting the packet via the direct low power radio frequency communications link.
- 21. A carrier embodying a computer program which when loaded into a processor enables a method as claimed in any one of claims 1 to 20.
 - 22. A device for participating in a first piconet of a scatternet and for delivering a packet to a destination device in a second piconet of the scatternet comprising:
- 25 means for creating a new direct radio communications link to the destination device while maintaining an existing direct radio communications link within the first piconet; and a radio transmitter for transmitting the packet via the new direct communications link.

23. A method of delivering a packet from a first device in a first piconet of a scatternet to a destination device in a second piconet of the scatternet comprising:

receiving the packet at the first device;

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- determining whether the creation of a direct radio communications link between the first device and the destination device is possible; and if it is not possible, forwarding the packet within the scatternet.
- 24. A method as claimed in claim 23, further comprising adding an address of the first device to the packet before forwarding it.
 - 25. A method as claimed in claim 23 or 24, wherein the received packet is transferred from a network layer to a link layer and, if possible, the link layer creates a direct radio communications link with the destination device and, if not possible, the link layer forwards the received packet.
 - 26. A method as claimed in claim 23 or 24, wherein the received packet is buffered in a network layer and a notification comprising the address of the destination device is transferred to a link layer and, if possible, the link layer creates a direct radio communications link with the destination device and, if not possible, replies to the network layer which transfers the received packet to the link layer for forwarding.
- 27. A method as claimed in claim 23, wherein the method further comprises, if
 the creation of a direct radio communications link between the first device and the destination device is possible, creating a direct radio communications link between the first device and the destination device.
- 28. A method as claimed in claim 23, wherein the received packet is a route request packet and the method further comprises, if the creation of a direct radio communications link between the first device and the destination device

is possible, transmitting a reply packet to a source of the received route request packet.

- 29. A method of determining a route from a source device in a first piconet of a scatternet to a destination device in a second piconet of that scatternet comprising, before generating a routing request, determining, at the source device, whether the creation of a direct radio communications link between the source device and the destination device is possible; and if it is not possible, generating, at the source device, a routing request for forwarding within the scatternet.
 - 30. A method as claimed in claim 29, wherein the method further comprises, if the creation of a direct radio communications link between the first device and the destination device is possible, creating a direct radio communications link between the first device and the destination device.
 - **31**. A method of delivering a packet from a first device in a first piconet of a scatternet to a destination device in a second piconet of that scatternet comprising:
- creating a third piconet between the first piconet and the second piconet; and transmitting the packet via the third piconet.
 - 32. A method as claimed in claim 31, wherein the first device operates as Master of the third piconet.

33. A method as claimed in claim 31 or 32, wherein the step of creating a third piconet comprises creating a direct radio communications link between the first device and the destination device.

34. A method as claimed in claim 31, 32 or 33 wherein the scatternet has a topology defined at initiation of the scatternet and creating a third piconet aadjusts the topology of the scatternet.

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- 35. A method as claimed in claim 31, wherein the third piconet creates a short-circuit in the network topology.
- 36. A method as claimed in any one of claims 31 to 35, wherein a piconet is a star-topology low power radio frequency network comprising a Master as a central node and one or more Slaves as dependent nodes, each of which has a radio communications link to the Master, and a scatternet is a distributed low power radio frequency network comprising a plurality of piconets that are interconnected by radio communication links.